

253. The spinal implant of claim 252, wherein said bone growth promoting material is one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.
254. The spinal implant of claim 219, further comprising at least one opening capable of retaining fusion promoting materials.
255. The spinal implant of claim 219, wherein the bases of at least two of said bone engaging structures are adjacent one another.
256. The spinal implant of claim 219, in combination with a device for forming said bone engaging structures on said upper and lower surfaces of said implant.
257. The combination of claim 256, wherein said device is a milling instrument.
258. The combination of claim 256, wherein said device includes a cutting tool with a V-shaped profile.

REMARKS

Applicant amended claims 1, 7-11, 18-20, 32, 50, 131, and 143, and added new claims 207-258 to further define Applicant's invention. Support for dependent claims 207-209, 213-215, and 255 is found at least in the specification on page 4, lines 20 and 21, claim 12 as originally filed, and Figs. 12 and 15. Support for dependent claims 210-212, 216-218, and 256-258 is found at least on page 5, line 22 to page 6, line 4 of the specification. Support for new independent claim 219 is found at least in claims 1, 3, and 5 as originally filed. Support for new claims 220-254 is found at least in the original dependent claims directed to corresponding subject matter that depend from independent claim 1 in the original claims as filed. New claims 207-258 read on elected

species 3 of the Restriction Requirement. Applicant submits that claims 1, 3, 5-15, 17-51, 131, 133, 135-145, and 203-206 read on elected species 3.¹

Applicant traverses the restriction requirement to the extent that it fails to identify any linking claims. Currently, elected independent claim 1 is a linking claim to at least species 1-4 and 6. Applicant submits that upon allowance of linking claim 1, at least the following non-elected dependent claims (with exemplary species in parenthesis) must be rejoined and examined under 37 C.F.R. § 1.104 for patentability: claim 2 (species 1); claim 4 (species 2 and 6); claim 16 (species 4); and claims 52-56 (species 6).

Elected independent claim 131 is a linking claim to at least species 1-3 and 6. Applicant submits that upon allowance of linking claim 131, at least the following non-elected dependent claims (with exemplary species in parenthesis) must be rejoined and examined under 37 C.F.R. § 1.104 for patentability: claim 132 (species 1); and claim 134 (species 2 and 6).

Applicant respectfully requests the Examiner acknowledge that independent claims 1 and 131 are linking claims and include form paragraph 8.12 in the next Office Action as is required by MPEP § 809.03. (See the "Examiner note" to form paragraph 8.12 which states that the paragraph "must be included in any restriction requirement with at least one linking claim present; MPEP § 809.03, page 800-52 1st col. (August 2001)). Applicant respectfully reminds the Examiner that according to MPEP § 809, "should any linking claim be allowed, the restriction requirement must be withdrawn. Any claim(s) directed to the nonelected invention(s), previously withdrawn from

¹ Claims 28-42, 50, 142, 143, and 203-206 include a recitation of a material or composition. (See, MPEP § 601.01(f), page 600-14, col. 2 (August 2001)). Claims 9-11, 21, 25, 43, 47, 139, and 144 recite subject matter that does not necessitate illustration. (See, 35 U.S.C. § 113, first sentence).

consideration, which depends from or includes all the limitations of the allowable linking claim must be rejoined and will be fully examined for patentability." (See, MPEP § 809, page 800-48, 2nd col., and MPEP §§ 809.03 and 809.04, page 800-52 (August 2001)).

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 50-1066.

Respectfully submitted,

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By



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CHANGES TO THE CLAIMS

1. An interbody spinal implant for insertion between adjacent vertebral bodies of a human spine, said implant comprising:

a leading end for introduction of said spinal implant into the spine, an opposite trailing end, and spaced apart sides therebetween;

opposite upper and lower surfaces between said leading and trailing ends and said spaced apart sides, said upper surface adapted for placement in engagement with the bone of one of the vertebral bodies and said opposite lower surface adapted for placement in engagement with the bone of the other of the vertebral bodies when said implant is placed between the adjacent vertebral bodies; and

a plurality of bone engaging structures formed on said upper and lower surfaces, each of said bone engaging structures having a base, at least two of said bone engaging structures each comprising at least one surface projections having at least one forward facing facet directed at least in part toward said leading end and at least one rearward facet directed at least in part toward said trailing end, each of said forward facet and rearward facet having a length and a slope, the length of said forward facet being longer than the length of said rearward facet, the slope of said rearward facet being steeper than the slope of said forward facet, said surface projections having opposed side facets extending from said base and being directed generally toward said spaced apart sides of said implant, respectively, said side facets located between said forward

facet and said rearward facet of said surface projections, said side facets converging toward each other in a direction away from said the base, said side facets having a maximum width therebetween at said base, said base being spaced apart from a base of another of said bone engaging structures by a distance no greater than one-half the maximum width of said surface projection, said forward facets of said at least two of said bone engaging structures facing the same direction of said projections.

7. The spinal implant of claim 6, wherein said opposed side facets converge to form a peak at the top of ~~each of~~ said surface projections.
8. The spinal implant of claim 7, wherein said peaks of at least two of said surface projections are aligned along lines that are at least one of perpendicular, parallel, and diagonal to the longitudinal axis of said implant.
9. The spinal implant of claim 1, wherein one of said opposed side facet each of said surface projections includes a left forward side facet and the other of said opposed side facets includes a right forward side facet directed toward said leading end and said sides, respectively, of said implant.
10. The spinal implant of claim 1, wherein one of said opposed side facet each of said surface projections includes a left rearward side facet and the other of said opposed side facets includes a right rearward side facet directed toward said trailing end and sides, respectively, of said implant.
11. The spinal implant of claim 9, wherein one of said opposed side facet each of said surface projections includes a left rearward side facet and the other of said

- opposed side facets includes a right rearward side facet directed toward said trailing end and sides, respectively, of said implant.
18. The spinal implant of claim 13, wherein at least one of said grooves has a horizontal cross-sectional shape ~~selected from~~ that is one of a v-shape, u-shape, and a box-like shape.
19. The spinal implant of claim 1, wherein said bone engaging structures ~~projections~~ are oriented relative to one another to form an array.
20. The spinal implant of claim 1, wherein said bone engaging structures ~~projections~~ are geometrically disposed relative to one another.
32. The spinal implant of claim 31, wherein said bone growth promoting material is ~~selected from~~ one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.
50. The spinal implant of claim 49, wherein said bone growth promoting material is ~~selected from~~ one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.
131. An interbody spinal implant for insertion between adjacent vertebral bodies of a human spine, said implant comprising:
- a leading end, an opposite trailing end, and spaced apart opposite sides therebetween;
- opposite upper and lower surfaces between said leading and trailing ends and said spaced apart opposite sides, said upper surface adapted for placement in engagement with the bone of one of the vertebral bodies and said opposite lower surface adapted for placement in engagement with the bone of the other

of the vertebral bodies when said implant is placed between the adjacent vertebral bodies; and

a plurality of bone engaging structures formed on said upper and lower surfaces, at least ~~one~~ two of said bone engaging structures each comprising at least one surface projections having at least one forward facing facet directed at least in part toward said one of said spaced apart opposite sides and at least one rearward facet directed at least in part toward the other one of said spaced apart opposite sides, each of said forward facet and rearward facet having a length and a slope, the length of said forward facet being longer than the length of said rearward facet, the slope of said rearward facet being steeper than the slope of said forward facet, said at least one surface projections having opposed side facets directed generally toward said leading and trailing ends, respectively, said side facets located between said forward facet and said rearward facet of said surface projections, said side facets converging toward each other in a direction away from the base of said projections, said forward facets of said at least two of said bone engaging structures facing the same direction.

143. The spinal implant of claim 142, wherein said bone growth promoting material is ~~selected from one of~~ bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.